Horse Shoe in Run 2B

- Two options
  - A: 4-channel Adapter Card
    - 37 columns x 3 rings = 111 ch
    - Total 111 x 4 x 2 = 888 ch
    - Dimensions : 6.7” x 3”
  - B: 4- & 6-channel Adapter Cards
    - 108 channels in L0-1 with 3-fold symmetry
    - 336 channels in L2-5 with 2-fold symmetry
    - 34 columns; 3 rings
      - outer ring : 18x6 + 16x4 = 108 (L0-1) + 64 (L2-5) = 172 ch
      - middle & inner ring : 34x4 = 136 ch each ring
    - Total (172 + 136 + 136) x 2 = 888 ch
    - Dimensions :
      - 4-ch. AC : 7.3" x 3"
      - 6-ch. AC : 10.7" x 3"
    - Have drawings

Other considerations

- High Voltage
  - L2-5 : max 300 V
    - Go through IB to AC via 80-conductor cable
    - From AC go to twisted pair cable via 6-pin Omnetics connector
  - L0-1 : 1000 V
    - HV cable will bypass AC completely
    - Separate connector (LEMO?)
  - Works OK both to options A or B
- Symmetry
  - Option A
    - L2-5 : stave = 4 hybrids = 2 L2-5 JC = 1 AC
    - L0 : sector = 6 hybrids = 2 L0-1 JC = 1.5 AC
    - L1 : 2 sectors = 6 hybrids = 2 L0-1 JC = 1.5 AC
    - Mapping for L0-1: 4 JC => 3 AC. Problem?
  - Option B
    - L2-5 : stave = 4 hybrids = 2 L2-5 JC = 1 AC
    - L0 : sector = 6 hybrids = 2 L0-1 JC = 1 AC
    - Mapping is straightforward

Other considerations cont'd

- Other stuff at the Horse shoe
  - Cards for radiation monitors
    - Run 2A cards & cables can be recycled (Sijbrand de Jong)
    - 6 doublets per side, round cables
  - Cards for 4-point temperature monitors
- 80-conductor cables
  - Have 80 bundles on the face of the calorimeter
  - Will need to rearrange them 80/2 = 40 => 37 or 34 bundles. Looks possible
  - Any changes of bundles on IB side will have effect as well

Other considerations cont'd

- Other grounding scheme of AC
  - Run 2A
    - Horseshoe not connected to Central Calorimeter
    - Common ground for all ACs
- Power dissipation

type	AVDD	DVDD	power (for 2.75 V)	power per chip
2 chip	120 mA	220 mA	0.94 W	0.47 W
6 chip	360 mA	340 mA	1.93 W	0.32 W
10 chip	600 mA	460 mA	2.92 W	0.29 W

  - Dissipate inside 2236 W (144 L0, 72 L1, 672 L2-5 hybrids)
  - Dissipate outside
    - 2236 x 0.8/2.75 /2 = 325 W per side from voltage regulators
    - + ? from the rest of Adapter Card
  - Water cooling?